AMENDMENTS TO THE CLAIMS

Claims 20-53 are pending. Claims 1-19 are cancelled. Claims 20, 37, 48-51 and 53 have been amended to further clarify the claim lanugage. The Applicant requests reconsideration of the claims in view of the following amendments reflected in the listing of claims.

Listing of claims:

1. – 19. (Cancelled)

20. (Currently Amended) A system for processing signals, the system comprising:

means for transforming adaptation observations from a complex arithmetic to two sets of real number arithmetic observations by means of binary orthogonalization transformation (BOT);

means for computing two sets of real number arithmetic adaptation parameters by applying two real number Least Square Solvers (LESS) to said two sets of real number arithmetic observations; and

means for transforming, after said computing with LESS, said two sets of real adaptation parameters to a set of complex number arithmetic adaptation parameters using an inverse binary orthogonalization transform (IBOT)~~, wherein~~

~~said set of complex number arithmetic adaptation parameters are used as filter parameters for adaptive filtering of the signal.~~ ; and

said means adaptively configuring one or more filters utilizing at least a portion of said set of complex number arithmetic adaptation parameters.

21. (Previously Presented) The system according to claim, wherein said two real number LESS are applied in parallel.

22. (Previously Presented) The system according to claim, wherein said two real number LESS are applied in series.

23. (Previously Presented) The system according to claim, wherein said LESS comprises a Recursive Least Squares algorithm (RLS).

24. (Previously Presented) The system according to claim, wherein said LESS comprises a Least Mean Squares (LMS) algorithm.

25. (Previously Presented) The system according to claim, wherein said LESS is a Householder transformation.

26. (Previously Presented) The system according to claim, wherein said LESS is a Cholesky decomposition.

27. (Previously Presented) The system according to claim, wherein said LESS is QR Decomposition (QRD).

28. (Previously Presented) The system according to claim, wherein said RLS is computed by a systolic array.

29. (Previously Presented) The system according to claim 20, wherein said LESS utilizes one or more of a Block Matched Filter Estimator (BMFE), a Block Zero Forcing Estimator (BZFE), and/or a Block Minimum Mean Square Error Estimator (BMMSEE).

30. (Previously Presented) The system according to claim 29, wherein one or more of said BMFE, said BZFE, and/or said BMMSEE are computed via one or both of a Cholesky decomposition and/or a QR Decomposition (QRD).

31. (Previously Presented) The system according to claim 20, comprising means for constraining said LESS as CLESS by using initial BOT from complex number arithmetic to real number arithmetic; means for applying two real

computation, Constrained Least Square Solver, (CLESS), wherein each one produces P output streams; and means for implementing a corresponding number of P IBOT modules from real number arithmetic to complex number arithmetic.

32. (Previously Presented) The system according to claim 20 comprising means for performing one or more of temporal, spatial, joint temporal and/or spatial channel estimation of the signal.

33. (Previously Presented) The system according to claim 20 comprising means for performing one or more of temporal, spatial, joint temporal and/or spatial channel equalization.

34. (Previously Presented) The system according to claim 20 comprising means for performing carrier frequency estimation.

35. (Previously Presented) The system according to claim 20, wherein said system is an adaptive filter.

36. (Previously Presented) The system according to claim 20 comprising means for performing one or more of channel estimation, system parameter

estimation, channel equalization, recursive updating of output parameters, non-recursive updating of output parameters, and/or system identification.

37. (Currently Amended) A system for processing signals, the system comprising:

~~at least one~~one or more processors that enable ~~for~~ transforming adaptation observations from [[a]] said complex arithmetic to two sets of real number arithmetic observations using binary orthogonalization transformation (BOT);

said ~~at least~~ one or more processors enable computing ~~computes~~ two sets of real number arithmetic adaptation parameters by applying two real number Least Square Solvers (LESS) to said two sets of real number arithmetic observations; and

said ~~at least~~ one or more processors enable transforming ~~transforms~~, after said computing with LESS, said two sets of real adaptation parameters to a set of complex number arithmetic adaptation parameters using an inverse binary orthogonalization transform (IBOT)~~, wherein said set of complex number arithmetic adaptation parameters are used as filter parameters for adaptive filtering of the signal.~~ ; and

said computing and transformings enable adaptively configuring one or more filters utilizing at least a portion of said set of complex number arithmetic adaptation parameters.

38. (Previously Presented) The system according to claim 37, wherein said two real number LESS are applied in parallel.

39. (Previously Presented) The system according to claim 37, wherein said two real number LESS are applied in series.

40. (Previously Presented) The system according to claim 37, wherein said LESS comprises a Recursive Least Squares algorithm (RLS).

41. (Previously Presented) The system according to claim 37, wherein said LESS comprises a Least Mean Squares (LMS) algorithm.

42. (Previously Presented) The system according to claim 37, wherein said LESS is a Householder transformation.

43. (Previously Presented) The system according to claim 37, wherein said LESS is a Cholesky decomposition.

44. (Previously Presented) The system according to claim 37, wherein said LESS is QR Decomposition (QRD).

45. (Previously Presented) The system according to claim 40, wherein said RLS is computed by a systolic array.

46. (Previously Presented) The system according to claim 37, wherein said LESS utilizes one or more of a Block Matched Filter Estimator (BMFE), a Block Zero Forcing Estimator (BZFE), and/or a Block Minimum Mean Square Error Estimator (BMMSEE).

47. (Previously Presented) The system according to claim 46, wherein one or more of said BMFE, said BZFE, and/or said BMMSEE are computed via one or both of a Cholesky decomposition and/or a QR Decomposition (QRD).

48. (Currently Amended) The system according to claim 37, wherein said ~~at least~~ one or more processors constrain[[s]] said LESS as CLESS by using initial BOT from complex number arithmetic to real number arithmetic, wherein said at least one processor applies two real computation, Constrained Least Square Solver, (CLESS), wherein each one produces P output streams, and wherein said at least one processor implements a corresponding number of P IBOT modules from real number arithmetic to complex number arithmetic.

49. (Currently Amended) The system according to claim 37, wherein said ~~at least~~ one or more processors enable performing ~~performs~~ one or more of temporal, spatial, joint temporal and/or spatial channel estimation of the signal.

50. (Currently Amended) The system according to claim 37, wherein said ~~at least~~ one or more processors enable performing ~~performs~~ one or more of temporal, spatial, joint temporal and/or spatial channel equalization.

51. (Currently Amended) The system according to claim 37, wherein said ~~at least~~ one or more processors enable performing ~~performs~~ carrier frequency estimation.

52. (Previously Presented) The system according to claim 37, wherein said system is an adaptive filter.

53. (Currently Amended) The system according to claim 37, wherein said ~~at least~~ one or more processors enable performing ~~performs~~ one or more of channel estimation, system parameter estimation, channel equalization, recursive updating of output parameters, non-recursive updating of output parameters, and/or system identification.